

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the Application. Please amend claims 138 and 141, as follows.

Listing of Claims:

1-111. (canceled)

112. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes.

113. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes comprise a group of single-wall carbon nanotubes having a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof.

114. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes form a monolayer extending in a direction substantially perpendicular to the orientation of the single-wall carbon nanotubes.

115. (previously presented) The array of claim 113 wherein the single-wall carbon nanotubes form a monolayer extending in a direction substantially perpendicular to the orientation of the single-wall carbon nanotubes.

116. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

117. (previously presented) The array of claim 113 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

118. (previously presented) The array of claim 114 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

119. (previously presented) The array of claim 115 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

120. (previously presented) The array of claim 112 comprising single-wall carbon nanotubes with at least one substituent bonded at at least one end of the single-wall carbon nanotubes.

121. (previously presented) The array of claim 112 comprising endohedrally modified single-wall carbon nanotubes.

122. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes are predominantly of (n,n) type.

123. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes are predominantly of (m,n) type, wherein m is not equal to n.

124. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon nanotubes are attached to a substrate.

125. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein at least one substituent at at least one end of the single-wall carbon nanotubes interact chemically with a substrate.

126. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes having a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof.

127. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the substantially parallel oriented single-wall carbon nanotubes form a monolayer on the substrate.

128. (previously presented) The array of claim 126 comprising single-wall nanotubes aggregated in substantially parallel orientation, wherein the substantially parallel oriented single-wall carbon nanotubes form a monolayer on the substrate.

129. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

130. (previously presented) The array of claim 126 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

131. (previously presented) The array of claim 127 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

132. (previously presented) The array of claim 128 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

133. (previously presented) The array of claim 124 comprising endohedrally modified single-wall carbon nanotubes.

134. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon nanotubes are attached to a substrate, wherein the substrate comprises a metal selected from the group consisting of gold, mercury and indium-tin-oxide.

135. (previously presented) The array of claim 125 wherein the substituent is a moiety selected from the group consisting of -S-, -S-(CH₂)_n-NH- and -SiO₃(CH₂)₃NH-.

136. (previously presented) The array of claim 124 wherein the single-wall carbon nanotubes are predominantly of (n,n) type.

137. (previously presented) The array of claim 124 wherein the single-wall carbon nanotubes are predominantly of (m,n) type, wherein m is not equal to n.

138. (currently amended) ~~The array of~~ A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon nanotubes are attached to a substrate, made by the a process of comprising:

- a) masking a first portion of a substrate, wherein the substrate has a first unmasked portion;
- b) binding a first plurality of single-wall carbon nanotubes to the first unmasked portion of the substrate using a first linking moiety;
- c) removing the mask from the first portion of the substrate;
- d) masking a second portion of the substrate, wherein the substrate has a second unmasked portion; and
- e) binding a second plurality of single-wall carbon nanotubes to the second unmasked portion of the substrate using a moiety selected from the group consisting of the first linking moiety and a second linking moiety.

139. (previously presented) The array of claim 138 wherein the first plurality is a predominately different type of single-wall carbon nanotubes from the second plurality.

140. (previously presented) The array of claim 138 further made wherein:

- a) the first plurality has a first homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof;
- b) the second plurality has a second homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof; and
- c) the first homogeneous characteristic is different than the second homogeneous characteristic.

141. (currently amended) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon

nanotubes are attached to a substrate, ~~The array of claim 124~~ wherein the substrate comprises a metal selected from the group consisting of gold, mercury and indium-tin-oxide.